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## Oral Communications

### Stress and Play Fluctuation in Wild *Lemur catta*

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**Key Words:** Ring-tailed lemurs • Anxiety • Indicator • Scratching • Playful activity • Madagascar

Strepsirrhines have been neglected in the study of animal play. Yet, data from a wide array of primate taxa are needed to understand role, functions and social determinants of play. We investigated play behaviour in wild ring-tailed lemurs (*Lemur catta*) at the Berenty Reserve (Madagascar) where two other sympatric lemur species, and potential resource competitors, live (*Propithecus verreauxi* and *Eulemur fulvus*). We followed two groups of ring-tailed lemurs (9 and 16 individuals) from November 2006 to February 2007. We evaluated play fluctuation during possible stressful conditions, such as the presence of neighbour groups of conspecifics (C), and the presence of groups of other lemur species (NC). We considered the absence of any other group (A) as the control condition. We first verified whether the presence of other groups did increase stress levels in the study groups. Stress levels were measured via scratching, which previous studies have shown to be a reliable indicator of anxiety in human and non-human primates. Scratching rates in the study animals were higher in the presence of other groups (C+NC) compared to when other groups were absent (A). Overall play rates were highest when other groups were nearby. In presence of NC groups, play rates decreased as NC groups approached the study groups. Instead, when only C groups were in sight, play rates increased as the distance between the study groups and other conspecifics decreased. Moreover, play was highest during extra-group aggressive encounters (involving C groups) whereas it was suppressed during intra-group fights. Our results suggest that play fluctuates in response to different stressful conditions and may be used as a mechanism to cope with anxiety.

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## Lateralized Behaviour and Posture in Two Lemurs' Species: Are They Linked?

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**Key Words:** Handedness • Lemurs • Posture • Postural Origins Theory

Lateralized behaviours of two different species of lemurs, *Lemur catta* and *Varecia variegata*, were observed in order to assess the relation between hand preference and posture. Behaviours of 7 black-and-white ruffed lemurs and 8 ring-tailed lemurs housed at the Parco Natura Viva – Garda Zoological Park (Italy) were recorded by focusing on the hand used for daily activities such as feeding, locomotion, jumping and posture. Furthermore, as the lemurs' tail is used in balancing, the lateralized tail position was recorded. The results of this study underline that significant hand preference was found at the individual level. In particular, the adults of both groups of lemurs showed significant right hand preference, supporting the hypothesis that hand preference becomes more stable with the increase of age of the actor. At the population level, ring-tailed lemurs show a significant right hand preference to start locomotion; on the contrary, black-and-white ruffed lemurs show no significant preference for any observed behaviour. Furthermore, neither species showed a significant lateralized tail position. In conclusion, the findings of this study suggest that lateralized behaviours of prosimians might be age-related. In addition, hand preference and posture seem not to be linked. However, further studies are necessary to assess the relation between hand preference and posture in prosimians.

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## The Spatial Behaviour of *Indri indri*

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**Key Words:** Home range • Ranging behaviour • Territory • Song

Quantitative descriptions of animal movement patterns and accurate home range estimates are important for the understanding of a species' spatial and behavioural ecology. Here, we illustrate home range size estimations and ranging behaviour of 12 groups of indris (*Indri indri*) inhabiting three different forest sites near Andasibe (Madagascar): the Réserve Spéciale Analamazaotra, the Station Forestière Analamazaotra (Mitsinjo forest) and the Maromizaha forest. A period of 14 months was spent between 2005 and 2010 collecting spatial data and information about group composition. We examined home range size, ranging behaviour and interactions between neighbouring groups, in order to increase knowledge of indri social interactions and territorial behaviour. Using the MCP (100%) method, home range size estimations varied from 6.29 ha to 26.95 ha (mean value of  $14.46 \pm 5.47$  ha), whereas the mean daily path lengths corresponded to  $287.16 \pm 145.74$  m and ranged from 149.44 to 397.90 m. We found a correlation between home range size and group size, which is presumably influenced by various factors such as availability of food, resources distribution and defendability of the territories. We found that indri groups defended their territories from intruders, and overlap between neighbouring groups did not occur. Inter-group encounters at the boundaries were relatively rare, supporting the hypothesis that the indris' song is effective in maintaining spacing between adjacent groups.